IN THE CLAIMS

1. (Original) A method of inflating and deflating a catheter having an expandable membrane, the method comprising the steps of:

controllably inflating the expandable membrane to a target pressure or volume;

ablating a desired tissue region while maintaining the target pressure or volume of the expandable membrane; and

controllably deflating the expandable membrane.

2. (Original) The method of claim 1, further comprising keeping the expandable membrane inflated until a region proximate the expandable membrane reaches a predetermined temperature range.

3. (Original) The method of claim 1, wherein the steps of controllably inflating the expandable membrane to a target pressure or volume is performed by inflation/deflation control means located within a first console.

4. (Original) The method of claim 3, wherein the inflation/deflation control means is a Proportional Integral Derivative controller.

5. (Original) The method of claim 4, wherein the inflation/deflation control means further includes a pressure switch that controls an on/off valve.

6. (Original) The method of claim 1, wherein, if the target pressure or volume is not reached, further comprising the step of re-inflating the expandable membrane in order to reach the target pressure or volume.

7. (Original) [Withdrawn by Examiner] ~~The method of claim 6, wherein the step of re-inflating the expandable membrane is performed by a pressurized coolant source within an intermediary console located between the first console and the catheter.~~

8. (Original) [Withdrawn by Examiner] ~~The method of claim 7, wherein the pressurized coolant source is a fixed volume reservoir located within the first console~~.

9. (Original) The method of claim 1, wherein the step of ablating the desired tissue region is part of a cryoablation process.

10. (Original) The method of claim 1, wherein the step of ablating the desired tissue region is part of a radio frequency ablation process.

11. (Original) A method for inflating and deflating a catheter having an expandable membrane, the catheter being part of a catheter system including a first console, a catheter, and an umbilical system coupling the first console to the catheter, the method comprising the steps of:

evacuating air from the expandable membrane by creating a vacuum in the expandable membrane;

controllably inflating the expandable membrane proximate a desired tissue region, the expandable membrane being inflated to a target pressure or volume in order to provide sufficient mechanical force against the desired tissue region;

ablating the desired tissue region while maintaining the expandable membrane at the target pressure or volume; and

controllably deflating the expandable membrane.

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32. (New) The method of claim 1, wherein the step of controllably deflating the expandable membrane includes preventing deflation until a temperature in the balloon is higher than a predetermined temperature.

33. (New) The method of claim 1, wherein the step of controllably deflating the expandable membrane includes reducing adhesion between the expandable membrane and the desired tissue region.

34. (New) The method of claim 33, wherein reducing adhesion includes preventing deflation until a temperature in the balloon is higher than a predetermined temperature.

35. (New) The method of claim 3, wherein the inflation/deflation control means is a proportional valve for controlling the delivery of fluid in order to reach and maintain a predetermined pressure in the balloon.

36. (New) The method of claim 3, wherein the inflation/deflation control means is a fixed volume reservoir in fluid coupled to a shutoff valve located within the first console.